SD PAMONG DEVELOPMENT RESEARCH

A Case Study

by

KASMIRAN WURYO

Jakarta, Indonesia

February, 1982

SD PAMONG DEVELOPMENT RESEARCH

A Case Study

by

KASMIRAN WURYO

Jakarta, Indonesia

February, 1982

CONTENTS

CONTENTS (Cont'd)

CONTENTS (Cont'd)

CONTENTS (Cont'd)

PREFACE

This is a report of a case study on SD PAMONG Development Research in Indonesia. There were many development efforts in Indonesia aiming at improving educational processes, but not all of them found their life beyond the experimental phase. Many of them fading away soon after the experimental phase was over or even declining before the experiment's schedule was completed. SD PAMONG development research is one of the efforts which survives and is even flourishing after the initial experimental phase was over.

It began as an experiment in two villages in Central Java. After the initial period was over, while continuation of the experiment in its original site was still underway, the results were adopted and tried out in three villages in Malang, i.e. a district in East Java. The positive outputs of the try out encouraged the Bupati Malang to use the PAMONG system in all villages in the Malang district. When it was beginning to be used throughout Malang, the results of the SD PAMONG experiments were also used to improve the provision of education to the disadvantaged groups in ten societies along the Kahayan River in Central Kalimantan, i.e. to develop effective and efficient Small School. Impressed by the reports on the outputs, the Governor of East Java conducted a field observation in Malang followed by a visit of the East Java team to observe the application of the experiment's results along the Kahayan River.

Now, based on the decision of the East Java Governor, the results of the experiment on SD PAMONG are being used in selected places throughout East Java. The plan is to use it

in all places in East Java wherever it is needed. The Governor of Central Kalimantan also decided to use it beyond the Kahayan River, i.e. to cover all places in Central Kalimantan.

At present, experiments on the use of PAMONG, i.e. the results of the development research, are also being tried out in Southeast Sulawesi and in the island of Madura.

Thus, SD PAMONG development research finds its life beyond the original experimental site, It has even been recognized by the present national development plan, i.e. REPELITA III as a tool to provide primary education but efforts are still underway to find ways to integrate SD PAMONG in the routine mechanism of the Ministry. The experiment for this purpose is being conducted in the district of Gianyar, Bali.

SD PAMONG has a long history and it has spread to many regions outside the original experimental sites. In each place the model has been adapted to suit the existing conditions of the respective regions. During the 30 working days available for conducting this case study and preparing the report, I have tried to study in depth the concept and some basic components of the project and its implementation in the experimental sites. But it was not possible to study in depth the way SD PAMONG has been adapted in the various regions outside the original experimental sites. I read relevant documents on SD PAMONG, and interviewed officials concerned with the development and the dissemination of the project.

The results of the case study are presented in the following order. First, the country's context is described with a brief summary of Government policy on education data and reports. The second part deals with the conception and operational components of the system. The findings suggest that the continuous development of the project has resulted from the interaction among six important sources. They are: (1) social acceptance; (2) dedicated and capable working group; (3) blessing from relevant authorities; (4) availability and flexibility of funding; (5) national strategic leadership; and (6) democratic management. The third part deals with the evaluation of the SD PAMONG Development Research. Many of the problems identified in the evaluation are being tackled and other remain to be dealt with in order to improve the already successful program. A summary of the findings and recommendations will be provided in the final chapter.

The opinions expressed in this report represent the views of the author and do not necessarily coincide with the official position of the Directorate General of Primary and Secondary Education, Ministry of Education and Culture.

I am especially indebted to Mr. Soemitro, Secretary of BP3K, Mr.H.J.X. Fernandes, UNESCO Consultant, Mr. B.W. Widada, of PAMONG Solo, Mr. Wayan Tarka of Gianyar, Mrs. Soeharini Toelle, BP3K staffmember, Mr. A. Getaspasti, PDM staffmember, who discussed my ideas, contributed worthy suggestions to the content, and critiqued the drafts. I am grateful to Mrs.Hedy Sunarjo for secretarial assistance, BP3K, the UPT PAMONG Solo and the Ministerial Offices of Gianyar Bali, for providing valuable information and assistance.

Kasmiran Wuryo

The results of the case study are presented in the following order. First, the country's context is described with a brief summary of Government policy on education data and reports. The second part deals with the conception and operational components of the system. The findings suggest that the continuous development of the project has resulted from the interaction among six important sources. They are: (1) social acceptance; (2) dedicated and capable working group; (3) blessing from relevant authorities; (4) availability and flexibility of funding; (5) national strategic leadership; and (6) democratic management. The third part deals with the evaluation of the SD PAMONG Development Research. Many of the problems identified in the evaluation are being tackled and other remain to be dealt with in order to improve the already successful program. A summary of the findings and recommendations will be provided in the final chapter.

The opinions expressed in this report represent the views of the author and do not necessarily coincide with the official position of the Directorate General of Primary and Secondary Education, Ministry of Education and Culture.

I am especially indebted to Mr. Soemitro, Secretary of BP3K, Mr.H.J.X. Fernandes, UNESCO Consultant, Mr. B.W. Widada, of PAMONG Solo, Mr. Wayan Tarka of Gianyar, Mrs. Soeharini Toelle, BP3K staffmember, Mr. A. Getaspasti, PDM staffmember, who discussed my ideas, contributed worthy suggestions to the content, and critiqued the drafts. I am grateful to Mrs.Hedy Sunarjo for secretarial assistance, BP3K, the UPT PAMONG Solo and the Ministerial Offices of Gianyar Bali, for providing valuable information and assistance.

Kasmiran Wuryo

CHAPTER I

BACKGROUND

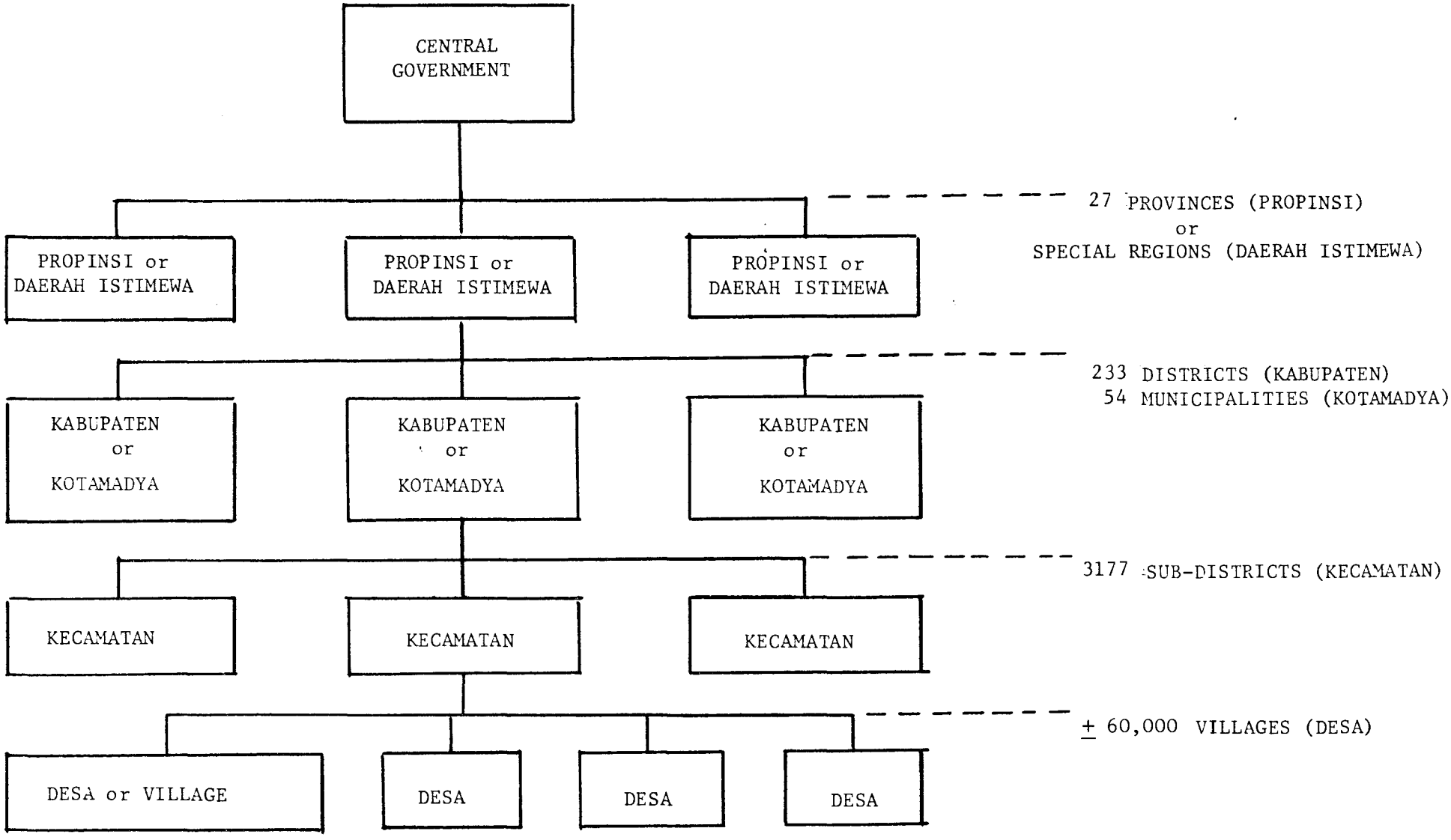
A. Introduction

Indonesia is an archipelago comprising of over 13,000 islands. The total population of Indonesia is estimated to be 147 million, distributed throughout an area larger than Europe. The population is predominantly youthful, with half the population under the age of 20 years. The Constitution of the country is founded on the national philosophy consisting of five principles, i.e. Belief in the One, Supreme God; Just and Civilized Humanity; the Unity of Indonesia; Democracy which is guided by Inner Wisdom in the Unanimity arising out of deliberation amongst Representatives; and Social Justice for the Whole of the People of Indonesia. Article 31 of the Constitution enshrines the right of every citizen for education and lays down that the Government should establish the national system of education.

Indonesia is divided into 27 provinces. The organization of the Government in Indonesia is shown in Figure 1, and has a most important bearing on the implementation of the project under study. The Provinces are headed by Governors, the Districts or Kabupatens by a Bupati and the Sub-districts or Kecamatans by a Camat.

To provide equal opportunities for basic education especially to those aged from 7 to 12, both systems, formal and non-formal, are used. In the formal side the system provides for six years of primary education, followed by six years of secondary education, the latter being divided into two three stages

Figure 1. THE GOVERNMENT ADMINISTRATION BY PROVINCES, DISTRICTS, SUB-DISTRICTS AND VILLAGES



(junior secondary and senior secondary education). At the tertiary level there are three types of instruction: (1) Academies offering courses geared to certain occupations, (2) Institutes consisting of a number of faculties within one professional field, such as engineering or agriculture, and (3) Universities which offer five-year courses in a range of professional fields (see Chart I for the Structure of the Educational System and Chart II for the Structure of the Ministry of Education and Culture).

B. Development of Primary Education

Repelita I (1969 - 1974)

The main phases of development of primary education can be distinguished according to the Five-Year Plans. The Government's broad statements in Repelita I on educational policy implied that the structure of the primary school system (SD) should be such as to enable schools to perform three basic functions: (1) to give every student a chance to enjoy education, (2) to prepare sufficient primary school graduates for entrance to secondary schools to meet the country needs, and (3) to prepare those who do not go to the secondary education for direct entry into adult communities and the world of work. The structure of primary education system on the whole assisted the performance of these three functions. Conceptually and institutionally, Indonesia is engaged in two typesof educational endeavours: formal and non-formal.

CHART I

INDONESIA

Existing Structure of the Educational System

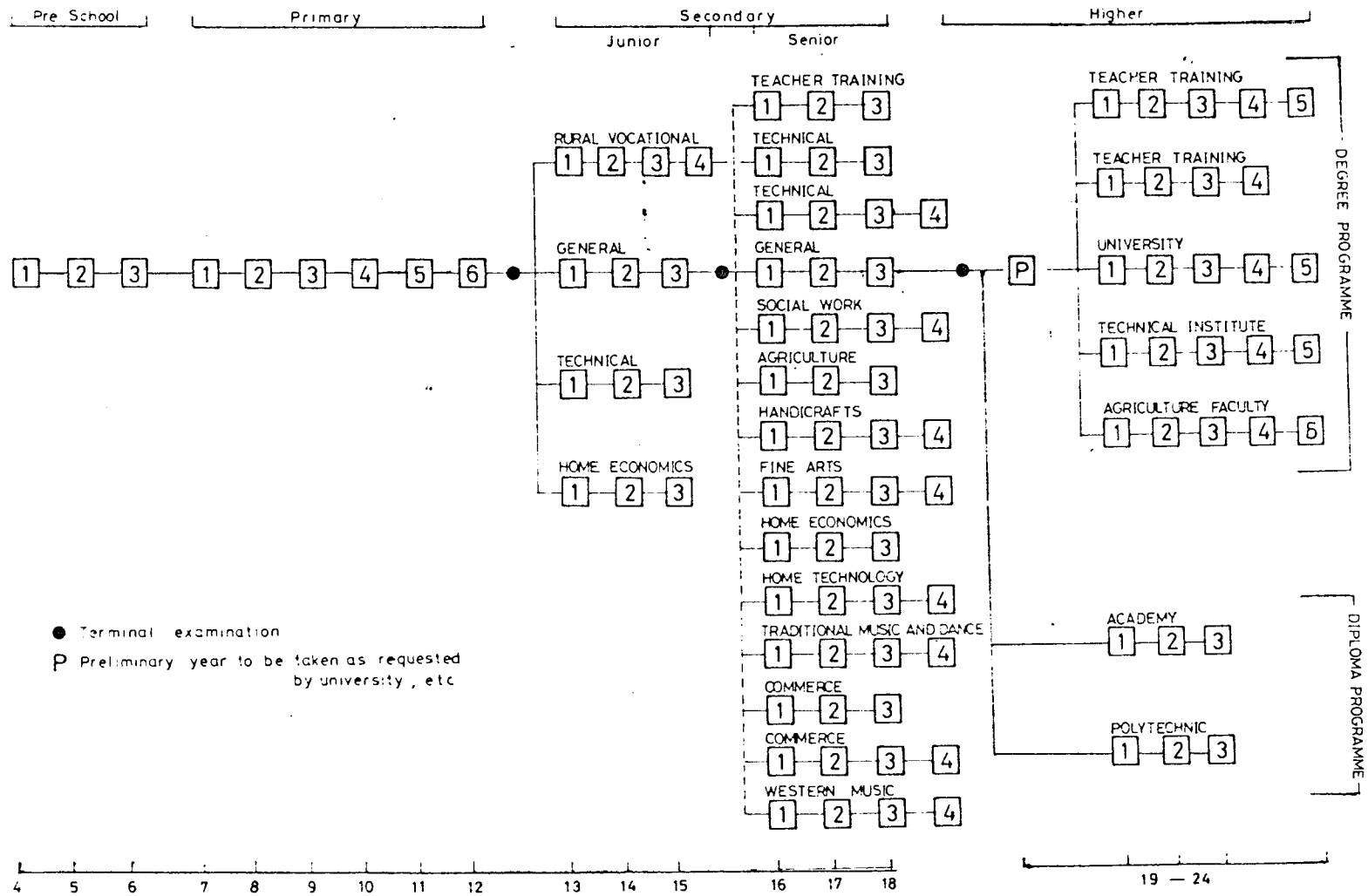


CHART II Structure of the Ministry of Education and Culture

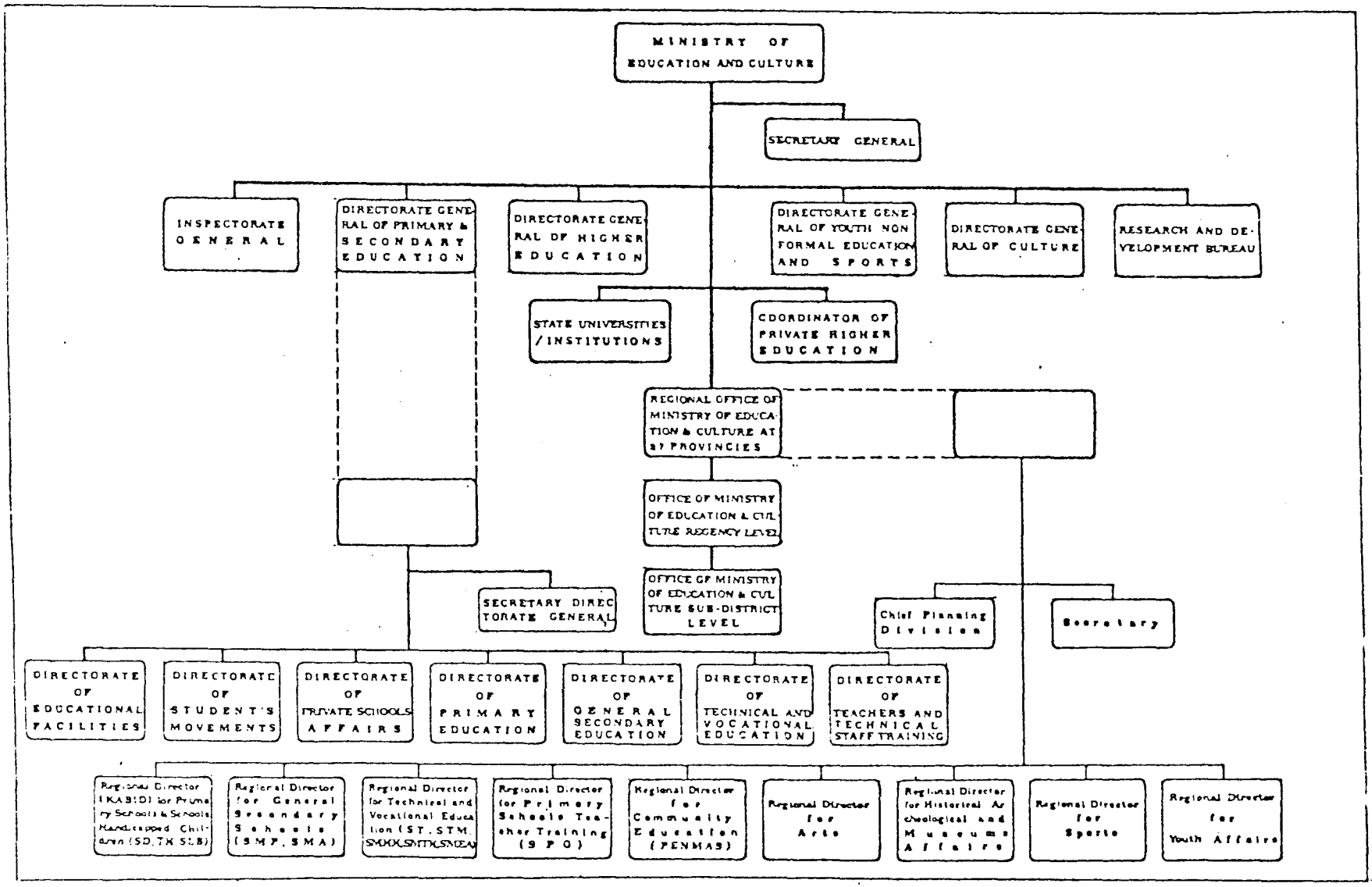


Table 1 shows the enrolment in primary school for the period 1951-1973. From 1969 to 1973 (Repelita I) the enrolment in primary school remained virtually stagnant.

Table 1. Total enrolment in primary education, 1951-1973

Year	Enrolment	Year	Enrolment
1951	5,318,014	1970	12,856,092
1960	8,955,098	1971	12,896,147
1966	11,577,943	1972	13,030,548
1968	12,463,495	1973	13,069,456
1969	12,602,415		

Repelita II (1974 - 1979)

In Repelita II, the main objective in primary school was to increase the learning opportunities for children in the 7 - 12 age group and simultaneously improve its quality. Table 2 shows the total enrolment and drop-outs in primary school (1974-1978).

Table 2. Enrolment and drop-outs in Primary Education, 1974-1978

Year	Enrolment	Drop-outs	
1974	13,707,866	1,221,256	(8.9%)
1975	14,280,157	924,581	(6.5%)
1976	15,550,924	657,506	(4.2%)
1977	17,265,291	815,736	(4.7%)
1978	19,074,819	1,270,020	(6.7%)

The data on Table 2 does not include children who were enrolled in the Madrasahs, i.e. Islamic Primary Schools. It was estimated that the total enrolment of the Madrasahs comprises more than 15% of the total enrolment of Primary School in the country.

The data in Table 3 were gathered from reports on Madrasahs compiled from the 26 provinces.

Table 3. Number of Schools, enrolment and teachers of the Madrasahs in twenty six provinces (Timor Timur or East Timor excluded) in 1978, 1979 and 1980.

Year	Number of Schools	Number of Teachers	Number of Children
1978	22,242	117,072	3,314,977
1979	19,864	106,063	3,161,558
1980	16,861	92,407	2,577,376

The target of 20.9 million students in primary education set in Repelita II by the end of the plan fell just short by about 1.8 million. This very significant progress had been made in the total primary education package by bringing schooling to such a large number of children in one of the most widely scattered country in world deserves a close study. Besides the oil boom, the achievement was due to planning which was both comprehensive and detailed. Both SD Inpres Program and Text Book Project were remarkably well planned and executed. The two projects demonstrated the capacity of the Ministry of Education and Culture to mount massive operations - construction of a total of 2,640,000 new school places and the production of 138 million primary text-books.

That the planning was both comprehensive and detailed can be illustrated by the implementation of the SD Inpres Program. The initiation of the program involved the participation of six Ministers.

The success of the SD Inpres Program can be traced to the following Presidential Decrees or Instructions:

Presidential Instruction No. 10 of 1973
Presidential Instruction No. 6 of 1974
Presidential Instruction No. 6 of 1975

Entitled "The Instruction of the President of the Republic of Indonesia concerning the Aid Program for the Construction of Primary Schools" the three documents include as their important clause, a directive for the realization of the school construction addressed to the six different Ministers. The Minister of Education and Culture, the Minister of Interior, the Minister of Finance, the Minister of Public Works and Electric Power, the State Minister of Economy, Finance and Industry and the State Minister for the Reorganization of Government Administration. The Presidential Instructions allocated responsibility to the Minister concerned, thus ensuring that there was proper detailed planning (Chairman of the National Development Board), that (1) funds for construction were available and that an organization for their disbursement were available (Minister of Finance), (2) the schools required had teachers and equipment to man them (Minister of Education and Culture), (3) suitable design was prepared (Minister of Public Works) to meet the specifications of education, and (4) the Governors of the Provinces were geared at the local level in getting the site selection and mobilization of community resources for construction process (Minister of Interior). Within each province, the Minister of Interior

delegated authorities to the Bupatis and mayors for reporting on progress made. The Head of each sub-district, the Camat, was delegated the ultimate responsibility for 'supervision of daily implementation'. In operational terms the project was contracted in detail at Kabupaten or Municipality level.

Repelita III (1979 - 1984)

In Repelita III the objectives of the education sector are :

1. Improvement of the quality of education;
2. Expansion of education opportunities;
3. Increase in the relevance of education to the needs of manpower;
4. Preparation of the young generation to assume future responsibilities in development; and
5. Increase in the efficiency and effectiveness of educational management.

In 1979-1980, total enrolment in the primary school was 21,165,724 out of which 5.7% (1,210,990) dropped out and 8.8% (1,618,718) repeated. Table 4 shows the number of pupils by age-group in the primary schools in 1979-1980. About 12% of the students were above the age of 12.

Table 4. Number of Pupils by Age in SD Schools in 1979-1980

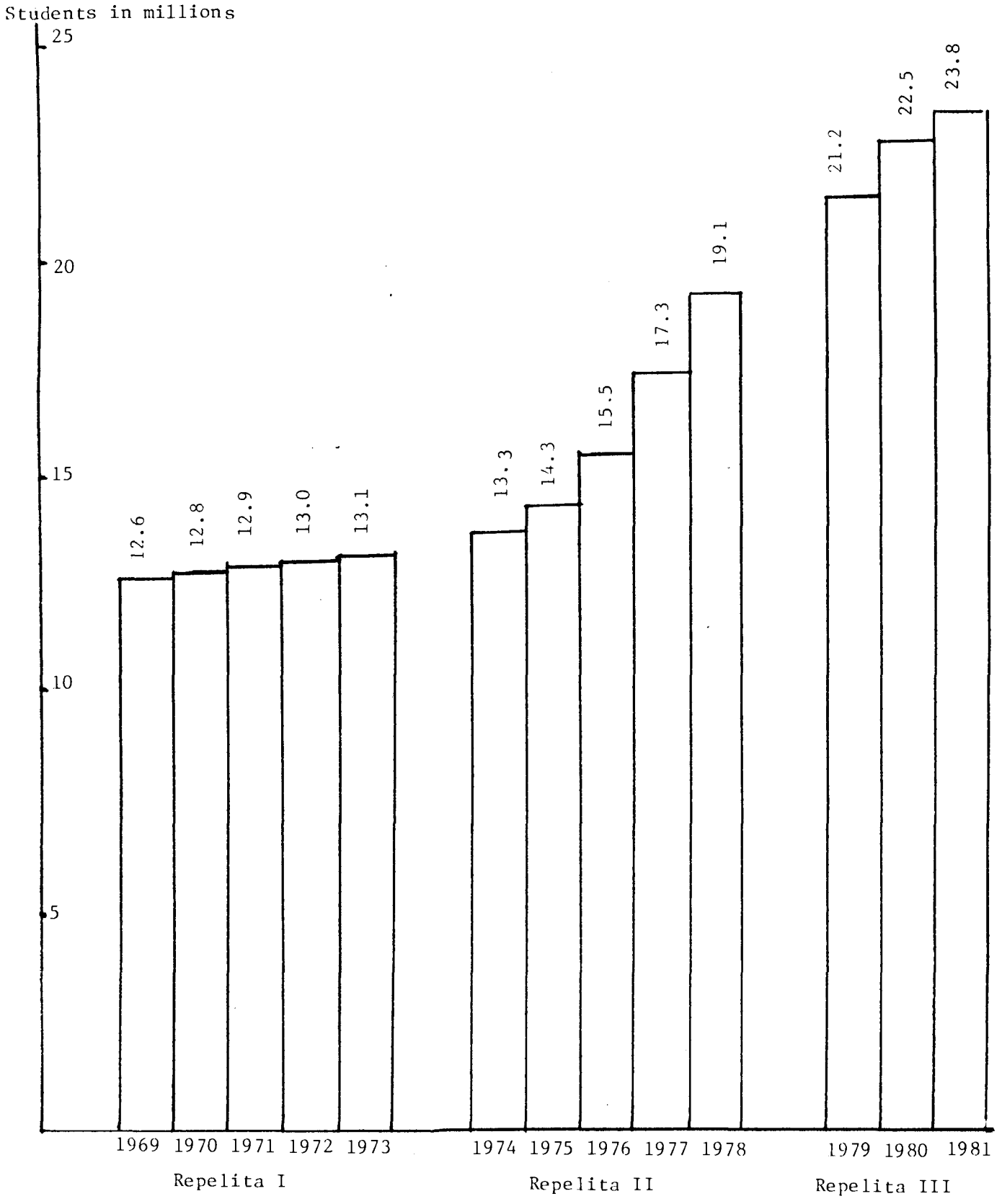
Age	Number of Pupils
6	793,470 (3.7%)
7 - 12	17,835,097 (84.3%)
13 - 15	2,452,549 (11.6%)
16 - 18	84,608 (0.4%)
Total Enrolment	21,165,724

In 1980-1981, the total enrolment in SD schools was 22,487,053; 84.8 % or 20,929,210 of pupils between the ages 7-12 were at school while 10.7% or 2,467,040 of the age group 7-12 were out of school.

The structure and organization of the primary school system in Indonesia has developed and performed extremely well. See Figure 2 for development of number of students primary school during the Five Year Plan. In 1951, about 5 million pupils were enrolled in the primary schools and in 1981-1982 the system provided primary education to about 23.8 million pupils. In order to realize the goals of universalization of primary education and the improvement of the quality of education, it is essential to clearly understand the strength and weaknesses of the present primary education system.

The educational policy of the Ministry of Education and Culture has been guided by three main concepts. The concept of life-long education, implying that education begins from the cradle and includes formal, non-formal and informal patterns of education. The second concept implies that the responsibilities for education should be borne jointly by the family, community and the government. The third concept is that education should be geared both for individual and national development and the basic guidelines of the State Policy (GBHN) considers the development of children as essential in the development of the nation.

Figure 2. The Development of Number of Students in Primary School During the Five-Year Plans



Between the academic years 1975 to 1980, there were 4,878,833 drop-outs from the primary schools and in 1980-1981, there were 2,467,040 children of the age group 7-12, who were not in school. Research evidence is conclusive that a vast majority of the children drop out of primary school because of socio-economic reasons rather than educational ones. To achieve the objectives of equity and justice and the goal of universalization of primary education, the Ministry of Education and Culture has faced two major questions: 1) How to deliver the primary school curriculum to all children included the disadvantaged children? and 2) How to improve the quality of education? Various efforts and projects have been undertaken to implement the goal of universalization of primary education and two such projects are the PENMAS (Community Education) and the SD PAMONG Project.

In the non-formal side there is a basic education program called KEJAR Package A comprising the three R's and basic knowledge and skills. This program is especially to those aged from 10 up to 45 years. The curriculum is delivered through learning packages, called Learning Package A. This program is run by the Directorate General of Youth and Sports. The Peniliks, the community education (PENMAS) field workers, who work at the Kecamatan level are responsible for guiding, supervising, and monitoring the learning group activities in the villages.

The Repelita III states that PAMONG will join other primary education institutions in implementing the policy on universal primary education.

CHAPTER II

BASIC CONCEPTIONS AND TWO OPERATIONAL COMPONENTS

A. Basic Conceptions

Providing education to all especially primary education is both public and private demand in Indonesia. It was the understanding of those who later became the PAMONG leaders, that in the future there won't be enough financial support to run effective primary schools, if primary education for all should be provided using existing system of primary school. This is because of the big number of clientele on one hand and the financial constraints on the other.

Therefore Indonesia was willing to host IMPACT Project of SEAMEO INNOTECH REGIONAL CENTER which was supposed to innovate effective and low cost system to deliver primary education so that all clientele would be able to be served. IMPACT is an acronym for Instructional Management by Parents, Community and Teachers. PAMONG stands for the Indonesian word Pendidikan Anak Oleh Masyarakat, Orang Tua dan Guru. IMPACT and PAMONG mean the same things. But soon after the project was launched it was realized that the IMPACT philosophy is not compatible with the conditions in Indonesia, because the project leaders were aware that school is a vital instrument of education.

Therefore PAMONG conception was reformulated starting not from a philosophy to abolish the school but to enable the school to cater for the education of all its clientele.

The conception was operationalized and the elements of PAMONG system were tested in an experimental setting. The testing provided feedback on the need to refine both the conception and its operationalizations, until a prototype was resulted.

In other words, there are several stages of conception development, the first one being the conception as it was formulated by INNOTECH. The final conception, which crystallized contains the following four concepts:

1. That learning is life-long education;
2. That learning should be self-instructional as far as possible;
3. That learner's and teacher's interaction should be developed systematically as part of the learning system; and
4. That education should be the responsibility of the parent, community and teacher.

Self-Instructional System

The self-instructional system is the heart of the PAMONG Project. Learning with modular materials may take place anywhere, not only in the classroom. The self-instructional system involves a fairly wide range of learning resources, but the resource which plays the primary role in the process is the self-instructional package. Other resources (Teacher, Instructional Supervisor, Tutor Sebaya, Tutor Kakak, etc) either

perform roles programmed by the modules or serve as learning aids in helping learners progress through the sequence of modules. The characteristics of the PAMONG self-instructional system is discussed with respect to the following: (1) Modules, (2) Self-directed Learning and (3) Teachers' Role.

1. Modules

A module is the smallest unit of an instructional program and in the PAMONG system the modules run anywhere from 60 to 100 pages long, with only a few lines of materials on each page. The modules are subdivided into "chunks" of learning and each "chunk" is expected to be finished in one period (40 minutes). There is a "block" modules, that follows every five ordinary modules, consolidating the work done in that set,and each serving as a review preparing the learner for the block test. The block tests are normally given by the Instructional Supervisor. Table 5 gives the approximate number of Modules/Review Modules, for Grades 3-6 in various subjects. For Grades 1 and 2 about 73 and 103 modules respectively have been prepared in Bahasa Indonesia and Mathematics.

Table 5. Number of Modules/Review Modules by Grade and Subject Matter

Grade	PMP	B. Indonesia	IPS	IPA	Math.	Total
3	11	24	13	27	27	102
4	16	24	15	17	32	104
5	25	60	17	33	31	166
6	23	60	16	26	33	158

Note: PMP - Pancasila Moral Education
IPS - Social Studies
IPA - Science

2. Self-directed Learning

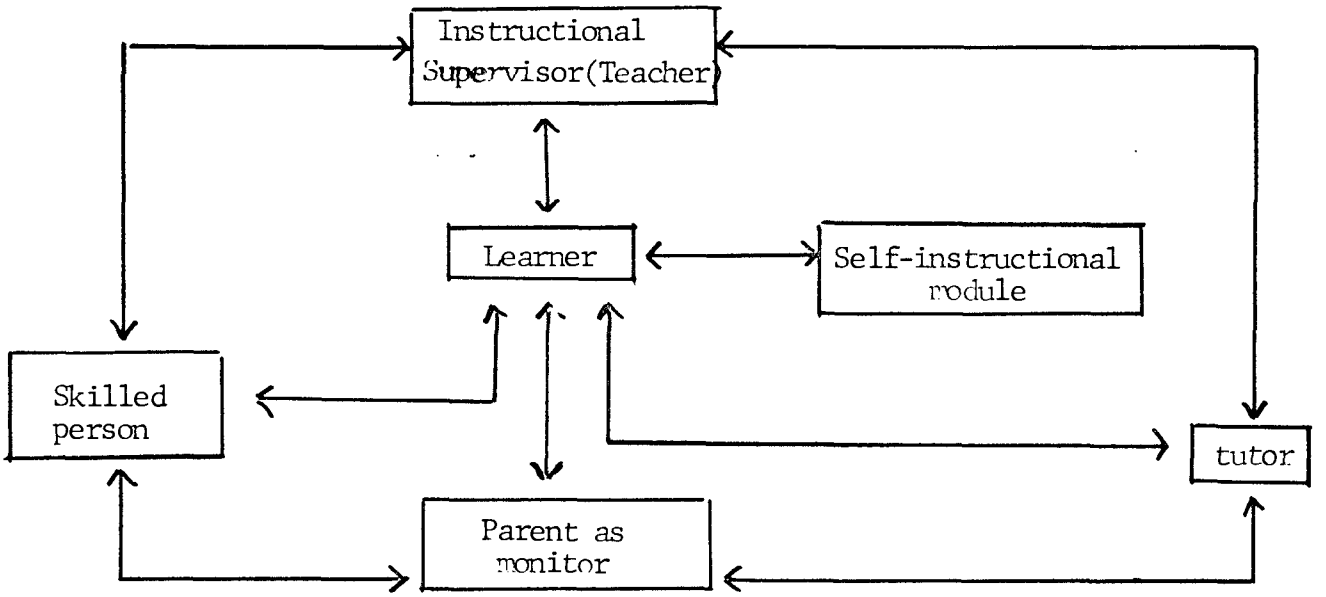
The concept of self-directed learning employed by PAMONG stresses on the initiative and commitment of the individual in furthering is progress. Theoretically self-directed learning does not mean that the student isolates himself from others and depends solely on his own wisdom. Thus group-directed learning, is in fact an integral part of self-directed learning. Even when learning is other-directed, if the significance of such learning is understood and accepted by the learner, it becomes a part of self-directed learning. One of the important ways of learning that should be employed by individuals is of course self-learning. It should, however, be clarified that such self-learning is not synonymous with self-directed learning. Self-learning is a mode of learning that is individualized where as self-directed learning may require not only individualized learning, but also collective learning including guided learning and inter-learning which may involve instruction from a knowledgeable person or a process of "participating learning" among friends or family members. Inter-learning is a process of group learning whereby two or more persons learn from one another through exchanging frequently their roles as tutor and learner.

3. Teachers' Role

In the PAMONG, the teacher has new roles such as, to train tutors, to encourage children's self-learning and to perform remedial teaching. The teacher is referred to as "Instructional Supervisor". The class teaching is left alone in the modularized school subjects. The roles of the Instructional Supervisor, Learner, Self-

Instructional Modules, Tutor, Skilled Persons and Parent as monitors are shown in Figure 3 depicting the learning process management. Teachers' main role is to manage the learning materials and learners. The use of professional teachers in the PAMONG system needs to be looked at carefully.

Figure 3. Learning Process Management



B. Two Operational Components of SD PAMONG

Dr. Daoed Joesoef, The Minister of Education and Culture, in his 1980 address to the Governors of the Provinces stated that compulsory education would be implemented using the following:

1. Conventional SD
2. SD PAMONG
3. SD Kecil
4. Madrasah Ibtidaiyah
5. Special Education
6. KEJAR

Thus it is clear that the intended target population for compulsory education is both those who are able to attend the school and those who could not attend it. The structure of SD PAMONG consist of elements to provide for the education of the two groups: in-school and out-of-school. The elements of the project are PKB, PPKB and PATJAR.

1. PKB - Pusat Kegiatan Belajar

The regular SD primary school is designed to have one teacher to teach each grade level. The implementation of SD PAMONG (PKB) as presently envisioned would free three teachers to do Patjar activities and there are three in-school teachers (one for Grades 1 and 2, one for Grades 3 and 4, and one for Grades 5 and 6). In Grades 1 and 2, the modularized subjects are mathematics and Bahasa Indonesia and other subjects are taught using regular teaching-learning process. For the earlier grades there are also programmed teaching materials, and it is the "teacher' rather than the learner who is

programmed. The so-called "programmed teacher" is not a professionally trained teacher in the PAMONG system. This person is an older student "teaching" younger ones. The older student strictly follows a pre-arranged plan or program presented in the programmed teaching materials not only what is to be taught, but how it is to be taught. The "Programmed Teacher" or"Tutor Kakak" takes over the teaching of Mathematics and Bahasa Indonesia in the lower grades beginning from the second semester.

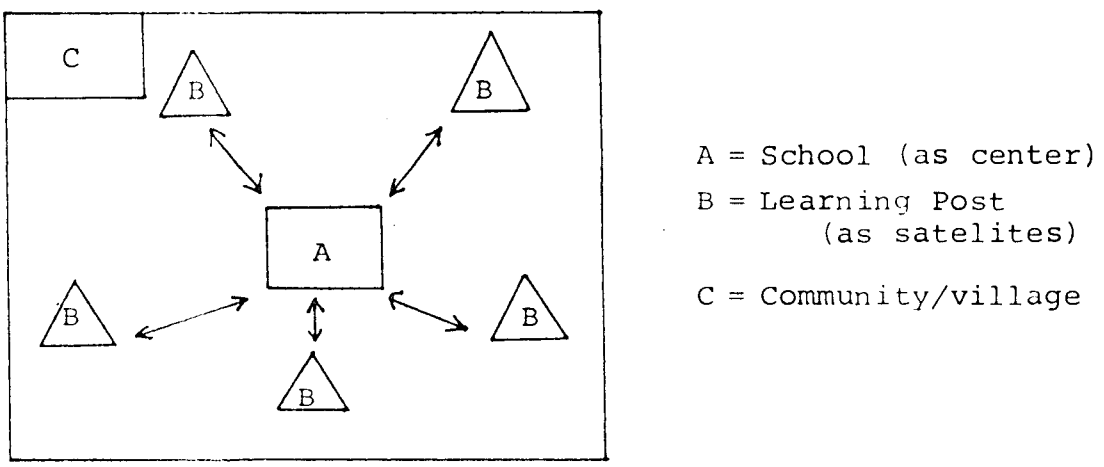
The students in Grades 3 to 6 study PAMONG modules in small peer groups of four to eight students. Peer group learning covers three periods each school day and is for Mathematics, Science, Social Studies, Bahasa Indonesia and Pancasila. The other three periods are used for conventional teacher-led class instructions in Religion, Health, Physical Education, Social Language, Arts and Crafts. Until recently, students in peer groups spend the majority of their time in self-study of modules. When they have difficulty they are expected to ask a Peer Group Leader (Tutor Sebaya) for assistance. Each group has a Tutor Sebaya who is selected by the teacher as being among the more able in the class.

2. The Learning Post (Patjar)

The essential idea behind the learning post is that by moving the "learning opportunity" close to where the drop-out lives or works, he is more likely to use the opportunity provided. As the name implies, the learning post is an actual place, set up in a community to serve the needs of out-of-school learners by (a)providing a place to store and distribute modules, (b) pro-

viding a meeting place in which the teacher (Instructional Supervisor) guides instruction, administer test, provides remediation and organizes non-modular learning activities, and (c) providing a location for skill training. Learning posts are set up in community centers, in homes or in schools. Some Patjars are located at PAMONG Schools (PKB -Pusat Kegiatan Belajar) and some are located at conventional schools (PPKB - Pembantu Pusat Kegiatan Belajar) whose headmasters are provided training in the PAMONG system. Figure 4 shows the structure of a Learning Post - school centered and community based.

Figure 4. The Structure of a Learning Post - School Centered and Community Based.



Patjar meets two or three times a week. Each Patjar is organized into two to five learning groups (Kelompok Belajar) of two to five learners. The learning group meets two to three times a week. It is not necessary that there should be a fixed meeting place for the learning group. The place is decided by mutual consent and the group is supervised by a tutor who is an older student or trained person from the local community. The tutor has the responsibility to check the learning process, give simple remediation, and seek out learners who miss group meetings. During the group meetings, learners will work together on the same module or work simultaneously on different modules. Grades 1 and 2 are not covered in the Patjar.

Every learning post has a certified teacher and pupils use the same materials and modules, and follow the same prescribed curriculum of conventional primary school. The education provided in the learning post is not non-formal education or out-of-school education as it is commonly understood.

The SD PAMONG Project finances the resources needed to reach drop-outs in large part through a reduction in the cost of in-school primary education by the substitution of self-modular instruction for teachers.

CHAPTER III

DEVELOPMENT STAGES OF THE PAMONG SYSTEM

A. Implementing Institutions

The SD PAMONG Project located in Solo, Central Java, has been a research project conducted by BP3K through the staff of the Sebelas Maret University (UNS) in Solo. In the Minstry of Education and Culture, BP3K has responsibility for planning, research and development for all levels of education. BP3K is not limited in scope to just one level or aspect of education as are the respective Directorates in the Ministry. BP3K also has an outreach to the education offices at the Kabupaten, the Kecamatan and the Desa levels, providing them with advice and assitance when requested on planning and research matters.

Cooperation between BP3K and UNS (Sebelas Maret University) began in 1974, when UNS was still known as IKIP Surakarta. The cooperation between the two institutions has played a major role in the development of the SD PAMONG Project. BP3K needed to develop an institution for both the development and dissemination phases of the SD PAMONG Project and UNS was interested in developing its technical competencies. Under a contract with BP3K, UNS has the major responsibility for the development of PAMONG. The Basic Document signed by BP3K and UNS in 1979, specifies the background, purposes, targets, strategies, and organizational framework of the cooperation between the two parties.

During the first phase (1979) of the cooperation of BP3K and UNS in developing the PAMONG Project, UNS

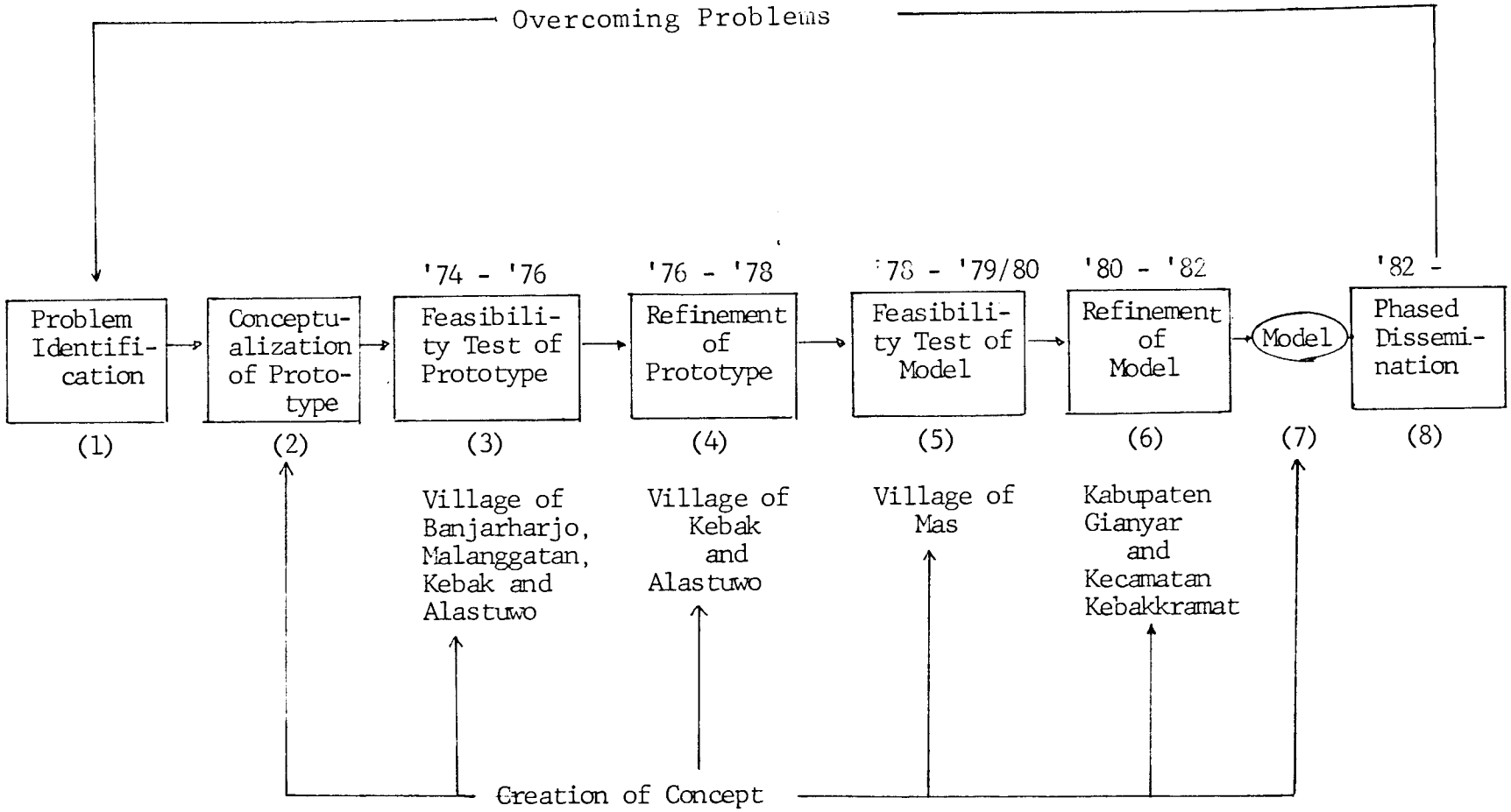
received funds from the Innotech Regional Center through BP3K. Additional funding for UNS/BP3K cooperation was provided by IDRC, USAID, UNDP/UNESCO and UNICEF for various mutually supportive purposes. At the present time, the Solo Unit (UPT) at UNS has the major responsibility the development of PAMONG. The Bali Secretariat which is made up of Ministry Officials has the primary responsibility of implementing SD PAMONG Schools, and the learning posts (Patjars) in the Gianyar district of Bali. Monitoring of aid and the makings of technical inputs to the activities of the Bali Secretariat are the responsibility of the Solo Unit which in turn is under contract to the BP3K and is responsible to the BP3K. The ultimate responsibility for the timeliness and quality of PAMONG outputs rests solely with BP3K.

If the present institutional building efforts are successful, the Solo Unit (UPT) at UNS, will become a center to provide technical support to other educational developments and to provide tertiary training at UNS in a wide range of technical competencies. The Solo Unit under contract with BP3K, will conduct special PAMONG related activities, provide technical support services and make necessary revisions to instructional materials and procedures.

B. Development Stages of SD PAMONG Project

Figure 5 depicts the stages in the development of the SD PAMONG Project. A broad general description follows on the various stages of development of the project.

Figure 5. Stages in the Development of the SD PAMONG Project



Purpose of:

Box 4 : Operationalization of the concept into concrete form

Box 5 : Perfect the elements of SD Pamong and integrate into the National Primary School System

1. Exploratory Prototype Stage (1974-1976)

The objective of the exploratory prototype stage (1974-1976) was to operationalize the various theoretical elements. In the preparation of the prototypes at Solo, the Provincial Education Office in Solo was not involved because there was a need to put together various activities which had not yet been tried out, something difficult to do within the system. The feasibility test of the prototype was carried out from 1974 to 1976. in the villages of Banjarharjo (1 school), Malanggatan (2 schools), Kebak (2 schools) and Alastuwo (2 schools). The main objectives of the feasibility study was to operationalize the concepts contained within the theoretical prototype, to determine the scale of work required for developing the prototype and to determine the possibility of the participation of the parents and community. The study showed some positive results, such as the possibility of the principles of self-instructional materials, and tutoring system in group learning activities. The study showed the need to upgrade the teachers to develop participation of the community members, to develop learning posts, to monitor activities and to develop formative evaluation.

2. Refinement of Prototype (1976-1978)

On the basis of the feasibility study it was decided to carry out the refinement of the prototype in two villages in Kebak (2 schools) and Alastuwo (2 schools) in the sub-district of Kebakkramat, southeast of Solo. By 1978 the operationalization of the theoretical prototype of the PAMONG Primary School had been completed. The prototype consisted of a set of self-instructional modules for the pri-

mary grades III, IV, V and VI based on 1975 curriculum, a set of manual for the programmed teaching for grades I and II, methods and materials for training PAMONG personnel, and a set of progress board to record the students' progress. The study also revealed that SD PAMONG students (regular school - children and drop-outs) could take the Primary School Learning Examination (EBTA) and obtain a primary school graduation certificate (STTB).

A comparative study conducted by BP3K (1976) also revealed that the achievement among SD PAMONG students was not inferior to that of students from regular primary schools. There appeared to be a rather clear case for the technical feasibility of the project.

3. Feasibility Test of Model in Mas Village Bali (1979-1980)

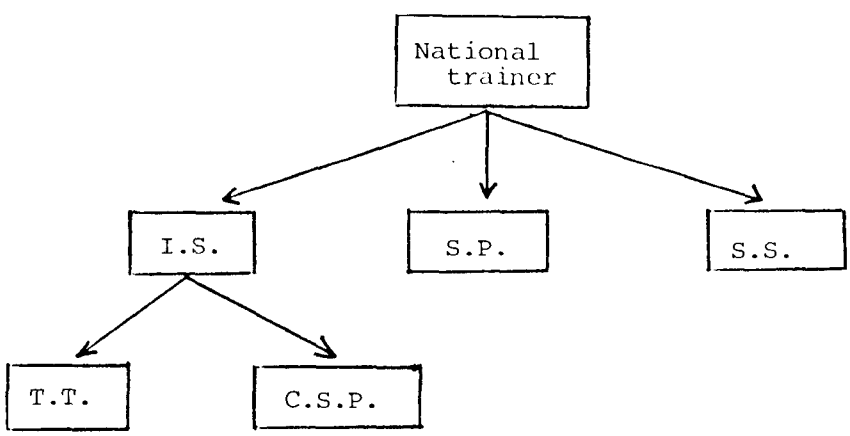
The village of Mas, Kabupaten Gianyar, Bali was selected for a feasibility test of the model on the following criteria: (1) high drop-out rate; (2) interests of local Education and Administrative Offices towards the experiment; and (3) easy communication for the purpose of evaluation. (Ministerial Decision No. 041/P/1976, of 19 February 1976). The experiment was tried out in five schools in the Mas village with the object of exploring the making of the model and to find out to what extent the system could be integrated into the national primary school system. The results showed that the PAMONG system could be managed by existing administrative mechanism and children of SD PAMONG Schools could take EBTA and get

the STTB. The experiment in Mas served to stimulate village-level interest and support, and has led to mobilization of administrational resources.

4. Training of Manpower for the PAMONG Project

The PAMONG system is an experimental project which is intended to extend the reach of primary education by using existing schools, facilities and personnel and local community resources. One of the major problems in disseminating the project is how to prepare manpower resources effectively.

On-the-job training is conceived as the basic method to prepare PAMONG system personnel. Routine consultation, workshops, lectures and self-evaluation are considered as supplementary methods.
The following diagram presents the flow of who should train whom.



Note: I.S. = Instructional Supervisor
S.P. = School Principal
S.S. = School Supervisor
T.T. = Tutor
C.S.P. = Community Skilled Person

In the recruitment of the personnel needed, the involvement of the Local Education Department and the Local Government Officer was vital. The training of the personnel involved in the PAMONG system was conducted and supervised by the PAMONG Unit at Solo and BP3K.

Contents and Methodology

Different types of personnel position needed different content and methodology of training. This is brought out in the following chart.

No.	Personnel	Content	Methodology
1.	Instructional Supervisor	a. Learning Process management	a. On-the-job training
		b. Module learning process	b. Routine consultation
		c. Administration	c. Workshop
		d. Learning resources management	d. Self-evaluation
		e. Human Relations	c. Lecture
		f. Guidance and counselling techniques	
2.	School Supervisor and School Principal	a. Supervision	a. On-the-job training
		b. Administration	b. Workshop
		c. Learning Process management	c. Lecture
3.	Tutor	a. Module Learning process	a. On-the-job training
		b. Management of evaluation	b. Routine/Incidental consultation

c. Remediative techniques

4. Community Skilled person — Delivery System — Consultation

5. Refinement of Model - Kabupaten Gianyar (1980-1982)

Impressed with the PAMONG results and potential reach the drop-outs, the Ministry of Education and Culture through BP3K desired to move to a larger scale trial of the system, partly to develop specific manuals for implanting, operating, and continuously evaluating the system. The Ministry of Education and Culture requested USAID assistance with the planning and implementation of a larger scale trial of the system in Kabupaten Gianyar in Bali. The purpose of the project financed by USAID is to test and further develop the PAMONG learning system in an operational setting which will encompass both in-school and out-of-school learners. The materials (self-instructional learning modules and programmed teaching guides and manuals) developed at Solo under PAMONG are employed in the USAID financed project. Twenty-six schools in seven Kecamatans (districts) in Gianyar, including the five schools previously selected in the village Mas, were selected and are following the PAMONG pattern. The project in Gianyar encompass roughly 5500 in-school and 4500 out-of-school leavers. The primary purpose of the project is to subject the PAMONG system to an operational test and to prepare an operational model. The major project inputs to achieve the expected outputs are (1) technical assistance, (2) training, (3) commodities

and (4) operational costs. In general, the major position of the first three items is provided from a US grant of $ 3,000,000.

PAMONG involves a fairly wide range of learning resources, but the resource which plays the primary role is the learning module (self-instructional package). Other resources (tutors, programmed teachers, peer groups leader, parents, community) either perform roles programmed by the modules or serve as learning aids in helping learners process through the sequence of modules. The self-instructional learning modules and programmed teaching guides and manuals developed at Solo are being tested in the field experiment in Gianyar Bali.

The general targets for the refinement of the model are:

1. To develop a general outline of a PAMONG SD Model, which operates in a standardized, effective and efficient manner in Gianyar Kabupaten;

2. To produce general implementation and SD PAMONG Management Guides (Juklaks);

3. Production of teaching-learning materials for SD PAMONG.

4. Production of materials and procedures for carrying out training for SD PAMONG personnel; and

5. Production of a number of back-up studies to assist in the development and dissemination plan for SD PAMONG.

SD PAMONG is at present in the second year of its pre-dissemination phase in Kabupaten Gianyar, Bali. During the 1980-1981 school year the SD PAMONG administrative model, learning materials and teaching learning process were tried out and refined at Grades 5 and 6 in 26 school sites among regular primary school children and in approximately 130 Patjars among students who had dropped-out of primary school at Grades 5 or 6. At the end of the 1980/1981 school year, 958 in-school Grade 6 students, or 99.6% of those who took the test, successfully passed the primary school examination and graduated which is comparable to regular primary schools.

In addition, 227 Patjar students completed study in SD PAMONG at Grade 6 and successfully passed the finishing examination. The passing rate for those who took the test was 95%.
An additional 298 Patjar students also passed a primary school equivalenccy examination and received an "Ujian Persamaan". primary school equivalence degree.

For the academic year 1981/82, SD PAMONG efforts in Kabupaten Gianyar are concentrated on extending the programme and refining its various components at Grades 1, 2, 3 and 4 among in-school students and at Grades 3 and 4 among out-of-school students. The bulk of drop-outs from primary school in Kabupaten Gianyar are at Grades 3 and 4. The SD PAMONG Project has been faced with the challenge of identifying the drop-outs, informing them of the new educational opportunities available to them, and motivating them to enter the programme.
A major activity taking place is the development

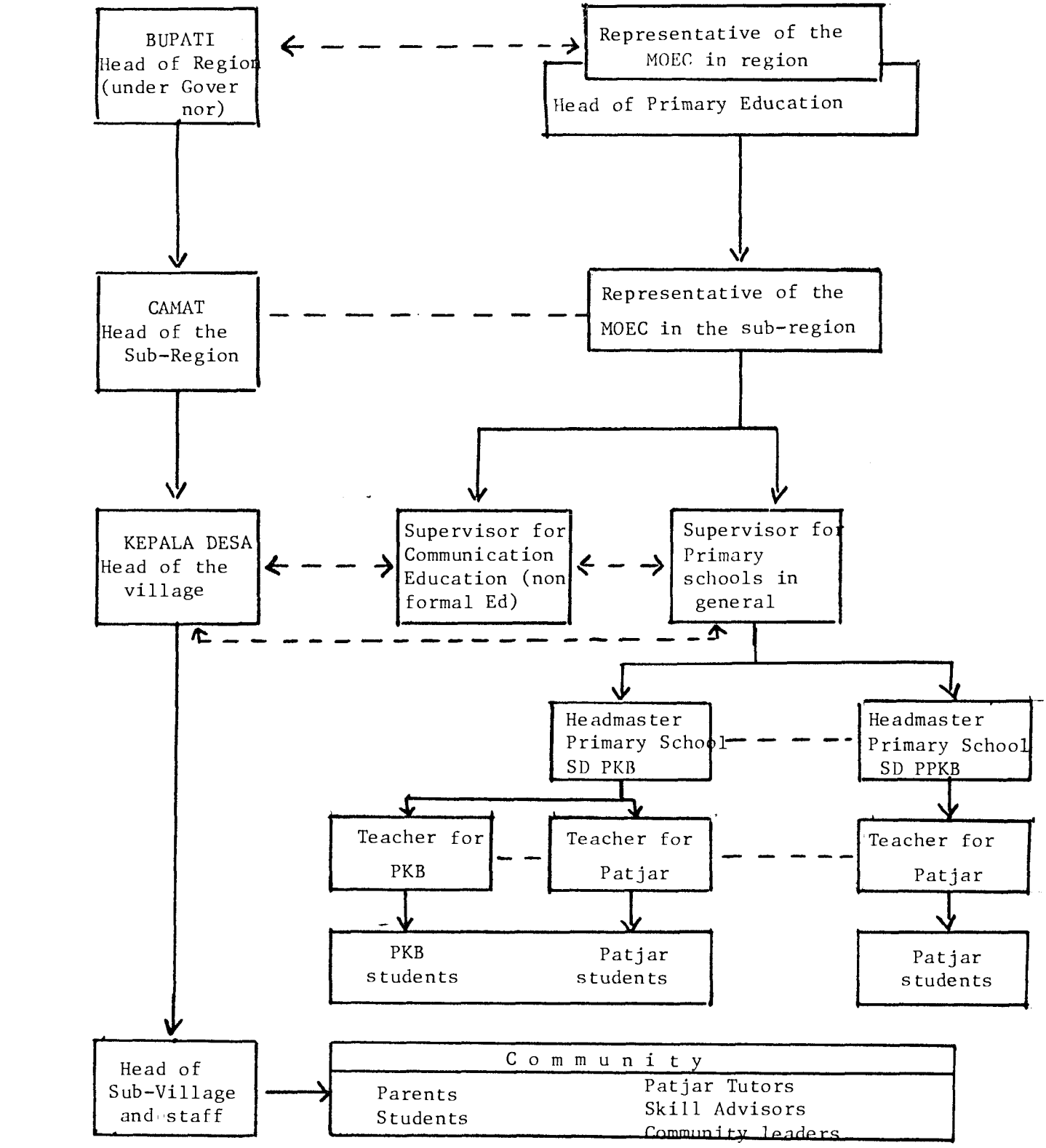
by the PAMONG Secretariat Staff of a Patjar Student Motivation Plan designed to encourage more active involvement by students and community in the PAMONG Patjar activities.

6. The Managerial Organization of SD PAMONG in Gianyar

The managerial organization of SD PAMONG system in Gianyar, Bali is shown in Figure 6. A set of management guides have been prepared for the Headmaster, District and Provincial Supervisor of Education and so forth. The official and community participation in the Patjars and in the PAMONG Project as a whole is the basis of implementing the project. The project administrative structure is the provincial (Kanwil) educational office to which the district (Kabupaten) education office in Gianyar reports. This regional office has three of its units involved in project support and supervision. (1) plannning, (2) primary education, and (3) community education. There are personnel in each of these units with specified project monitoring and support responsibilities. The Kabupaten Education Office in Gianyar has identical units involved in project administration with one person in each unit assigned full-time to the project. Each of the 7 sub-districts (Kecamatan) involved in the operational trial have units involved which are conterparts to the Kanwil and Kabupaten units. The twenty-six Headmasters (Kepala) report to their respective Kecamatan education offices, and each of these Headmasters have responsibility for the work of the Instructional Supervisor in his school and in the learning posts serviced by his school.

Figure 6.

MANAGERIAL ORGANIZATION OF SD PAMONG SYSTEM



Note : ———— instruction line

---------- consultation line

There are administrative relationships between the education offices at the district and sub-district levels and respective Kabupaten Chief (Bupati) and Kecamatan Chief (Camat) offices. There are also linkages between the Camat and Head of the Village (Kepala Desa).

7. PAMONG Learning Post Project in Malang

The Kabupaten of Malang took the initiative in adapting the PAMONG system for educating drop-outs from Grades 5 and 6. This programme is almost exclusively a Kabupaten project. The project is using the modular self-instructional materials developed in Solo. The project is organized through the instrumentality of Task Forces at three levels, Kabupaten, Kecamatan and Desa. Lines of supervision and communication run vertically from Kabupaten to Kecamatan to Desa. The Kabupaten Task Force took the initiative in obtaining learning materials and learned the operation of the PAMONG system from the PAMONG Solo Group. The Kecamatan Task Force is involved in getting the village task forces organized in supervising and monitoring local activity and in providing encouragement to local forces. The Desa level task force has been responsible for drawing up a census of eligible learner, promoting the project maintaining the learning posts and mobilizing "students" to attend learning post activities.

Teachers are recruited locally from the village for Grades 5 and 6 of the primary school. The format of learning activities is similar to the format

Patjars in the SD PAMONG Project. The financing of the project is almost exclusively from Kabupaten funds. The experiment in Malang demonstrates that PAMONG can be adapted to the local situation and can be administered by routine bureaucratic mechanism

It may be difficult to replicate the Malang PAMONG Project since the major impetus for the project came personally from the Bupati. In addition, it is also not clear whether the project will be continued to be implemented with the same momentum when the Bupati is transferred.

8. Small Schools

Villages in Central Kalimantan are generally speaking small. Consequently, most of them are only able to maintain one SD. The Small Schools Project is moving forward under the guidance of BP3K and a local "working group" drawn from the Provincial Education and Culture Office, the Provincial Government and the Teacher Training School (located in Palangkaraya). Ten small schools have been organized using PAMONG materials produced in the province using regional government funds. Two schools from each of the five Kabupatens of Central Kalimantan were selected and these schools are to serve as demonstration schools and development centers for future phases of dissemination of the PAMONG system. So far modular studying material is being used in Grades 5 and 6 and gradually PAMONG materials will be used in all grades. The delivery system developed for PAMONG seems to be well suited to meet the needs of small schools.

PAMONG allows teachers to conveniently manage more than one grade at a time since most learning involves modular self-instructional materials. PAMONG also provides the possibility of peer-mediated instruction using more advanced students to tutor students from the lower and/or the same grades.

The use of SD PAMONG Research and Development results for the development of Small Schools are also being tried out in Southeast Sulawesi and in the island of Madura. In East Java the results are being used both for the development of Small School and for providing education to those who are unable to attend the school in its regular time.

CHAPTER IV

EVALUATION OF THE SD PAMONG DEVELOPMENT RESEARCH

A. Element of SD PAMONG

In evaluating the SD PAMONG Project it will be best not to look at the PAMONG system as a single integrated approach to primary education including in-school and out-of-school pupils. The breakdown approach offers a clearer way to evaluate PAMONG in meaningful parts. The breakdown of the PAMONG system into its elements also points out some of the possibilities of the alternative versions of PAMONG that might be applicable for certain context and policy goals.

1. Modular Self-Instructional System

The modular self-instructional system, is the heart of the PAMONG Project. The modular system involves a fairly wide range of learning resources, but the primary resource is the modules, and other resources, are Instructional Supervisor, Tutor Sebaya and Tutor Kakak, etc.

1.1. Modules

Over the period of over six years, the PAMONG/Solo Unit has written, tested and revised the modules in the various school subjects. The monitoring and refinement of the modular system of instruction was done in part through the financial aid provided by IDRC. The IDRC aid was used in training of module

writers, in designing writing, monitoring and editing of modules, and in micro studies. The IDRC aid was not broken down according to "lines" in a project budget but it was left to the discretion of the project staff to utilize the aid to meet the project objectives. All expenditures were documented and accounted for. According to the project personnel, the flexibility of use of the finances provided by IDRC was critical in the development of the PAMONG Project.

A number of problems associated with the system of modular instruction were observed. Some of the problems were administrative and some were substantive. The administrative problems are being handled so that the problems which are identified from various reports on the PAMONG Project are as follows. The foremost substantive problem which needs immediate attention is the lack of interests of the students in modules, mastery of the modules, and the completion of at least the core modules by all the students. There are also issues related to the structure of the modules themselves. The language used is very dry and the objectives are written in a form that is not easy for the children to understand and appreciate.

One serious problem with the modules has been the remarkably different rate at which modules are mastered. Interesting questions have been raised about the amount of remediation needed by students on various modules (Bernard 1980). Why do students in some PKB's need more remediation on the second module and then progressively more on the third module ?

Is it because the modules are progressively harder so why do the other PKBs in the same locality not show the same results? Or is it because the students are losing interest, or are they not properly learning the materials?

The self-paced feature of modules generally creates more complex management learner problems than it solves. A number of studies have been identified by PAMONG to cover the self-paced feature of the modules into group-paced and experience shows that this approach is managerially simpler than an individual-paced module. Modules need not be just for self-study. They can be used in different ways, e.g. they could form the basis of discussion between teacher and students.

There are a number of problems with modules that require continuous studies, e.g.:

1. Better sequencing of modules
2. Making the modules more objective-based
3. Improving the modules focus
4. Improving the modules depth
5. Distribution of the modules to schools
6. Checking the modules length, e.g. by using the modules formative tests as a guide to the modules length. If the test takes more than 15 minutes to complete, and if it tests for essential objectives only, then chances are the module is too long. If it takes less, then chances are the module is too short.
7. Better orientation of students to each module. The module objectives may be presented in a variety of formats: (a) Lists, (b) Advance Organizers, (c) Summaries, (d) Pre-tests.

8. Making the modules presentation more multi-media

1.2. Tutor Kakak - "Programmed Teacher"

In Grades 1 and 2, the modularized subjects are mathematics and Bahasa Indonesia, and other subjects are taught using the conventional teaching-learning process. For Grades 1 and 2 there is also programmed teaching materials, and it is the old students "Tutor Kakak", who is programmed. The Tutor Kakak strictly follows a pre-arranged plan presented in the programmed teaching materials. During the Tutor Kakak sessions, the teacher is supposed to give personal attention to a group of slower learners. The Tutor Kakak seems to be effective, though teaching is a simplified version of traditional teaching and on the whole is mechanical with little variation.

Children in Grades 1 and 2, need to interact with a teacher. Also, it must the pointed out that students with learning disabilities may require intensive supervision by the professional teacher, especially in the basic skills of reading and writing. For example in one of the lessons given by Tutor Kakak, a girl from Grade 1 was asked the question 4-3= ?, the answer given was 7. She was asked to sit down. After some time the Tutor Kakak put the the question 5-2= ? and the same girl replied 7. The answer was ignored. Obviously the girl was having problems with the plus and minus symbols. The use of professional teachers in Grades 1 and 2 should be carefully monitored. One gets the impression that teachers tend to be managers of the learning materials (modules) rather than managers of learning.

1.3. Tutor Sebaya

Students in Grades 3 to 6 study PAMONG modules in small group of four to eight students. Students in peer groups spend the majority of their time in self-study of modules and when they have difficulty they are expected to ask the Tutor Sebaya for assistance. Each group has a Tutor Sebaya who is selected by the teacher as being amongst the more able in the class. Children often study by themselves with little exchange between tutor and students. Sometimes students within a group are all studying different subjects making it difficult for students to help each other. At times the teachers have not been provided with adequate training in how to select, train and monitor tutors. All these problems are now being looked into through a series of studies on new teaching/learning procedures. Three concepts are being tried out and the objectives for each of the concepts are: (1) to assist all students to complete module study targets, (2) to stimulate discussion and interaction within learning groups; (3) to make learning more interesting and exciting for students; and (4) to improve the processes through which students receive remediation.

The key aspects of each of the new teaching/learning concepts to be tested are summarized below:

Concept A:

- students begin study each day in their regular learning groups
- after initial self study in regular learning groups, students enter the subject-matter

learning group to study modules they select (guideline: module being studied by slowest student)

- students to select which subject matter learning group they wish to enter
- subject matter learning groups use a set of specific procedures to study modules led by the group tutor
- group tutor selects procedures to be used depending upon the subject matter
- all students take module tests at the same time; students passing the test go onto study new modules individually or read enrichment materials linked to curriculum being studied in modules; students not passing receive remediation from fellow students in subject matter learning groups. If they fail the test twice they receive special remediation from the Instructional Supervisor (PP)
- module study targets are presented on a monthly basis. (for the try-out ten modules have been selected) and all students must complete targets. If students finish the targets early, they may not proceed to target for the next month but must help fellow students or study enrichment materials such as Buku Paket or library books.

Concept B1 and B2 :

- Ten modules have been prepared with special instructions on how to study the material contained. These instructions come from a set of 11 procedures for study led by a group tutor. Descriptions of test procedures are provided.

- In Concept B1 the isntructions to the tutor are written in the modules; in B2 they are contained on a separate sheet.
- Students study in their groups and the groups do not change. All group members study the same module at the same time.
- When ready, the group takes the module test at the same time
- Students passing the test assist those who do not pass in their group after the first testing.
- Students failing test a second time received special remediation from the Instructional Supervisor.
- During remediation students discuss questions missed and why
- Students take turns being tutors
- When finished studying module targets (weekly targets) students study enrichment materials linked to curriculum being studied in modules.

Concept C :

- Students study individually in groups, but study different modules
- All students in class take module tests (different tests depending upon module studied) at the same time
- Grade VI students check and score module tests and give results to Grade V students
- Grade V students passing go on to new modules; those failing re-study and/or receive help from friends
- Weekly module study is established and students may not proceed beyond target

- Student finishing targets early study enrichment materials/linked to curriculum in modules targeted
- At least twice a week, the teacher teaches difficult material in modules using "Klasikal" method (u.e. traditional teaching).
- Some work can be given by teacher based upon difficult material.

2. Follow Up

Upon completion of the try-out, results from the observations and questionnaires for teacher and students will be examined by the Solo staff. The strengths and weaknesses of each concept will be determined and a recommendation will be made for modification and improvement of the SD PAMONG teaching/learning process in the PKB, but because the learning environment in somewhat different in the Patjars certain aspects of the processes recommended for the PKB may have to be modified. The new procedure identified should be included in the revised Juklak and modification of the modules should take place as required.

The present ratio of one module for three students in PKB could result in unacceptable module production costs upon large scale dissemination of the PAMONG Projects. But the improvement of the teaching/learning process could take the ratio to one module for five students, as envisioned in the original documents of the project.

The staffing structure of a typical PKB needs careful attention. At present four teachers could be released to do Patjar activities. The staff in

PKB schools and some of the consultants working on the PAMONG Project have expressed apprehension about the ability of three teachers and the headmaster to effectively manage all classes in a PKB school. The main reason for the apprehension is the large amount of non-modularized learning for which the teachers are also responsible. In Grades 1 and 2, only Bahasa Indonesia and Mathematics are modularized and in other grades, five school subjects are taught in the form of modules. There is suggestion to retain two teachers for Grades 1 and 2 because supervision by professional teachers is needed especially in the basic skills of reading and writing. In Grades 3 to 6, the suggestion is to release two teachers instead of three. The teacher retained should be responsible for the following types of activities:

1. Training of tutors especially Tutor Kakak;
2. Supervising "Programmed teaching" activities of the Tutor Kakak throughout the year; and
3. Assisting the remediation work for all grades.

The staffing problem needs careful study so that teachers become managers of learning instead of managers of learning materials.

3. Patjar

Patjar is the key to the success of the PAMONG Project for education of out-of-school pupils. Patjars are now established in the following ways: (a) Regular schools are converted to PKBs. In a large part through a reduction in the cost of in-school primary education resources are released for running of Patjars and (b) Patjars are established without converting schools to the PAMONG system. A PPKB is a conventional SD primary school which serves as a center for the Patjars. PPKB must bear all the normal costs of a conventional

primary school, but it must also add the costs of teachers, instructional materials, and facilities for out-of-school learners.

The approach for establishing an effective learning post involves three stages :

1. Identification
2. Recruitment
3. Retention and Completion

3.1. Identification

This is the initial stage of establishing the Patjars. With the financial assistance from IDRC, the Solo/PAMONG Unit conducted a national survey to determine the areas where PAMONG may be implemented especially in terms of providing education for drop-outs. The project in Kabupaten Gianjar, Bali, selected 26 schools, primarily on the basis of the survey which selected favourable locations with respect to large clusters of potential out-of-school learners. In the survey interviews with key government officials, schools and community provided information concerning location of drop-outs.

3.2. Recruitment

In this phase village leaders and government personnel cooperated to bring to parents, information concerning the goals of PAMONG and the opportunities it provides for drop-outs.

3.3. Retention and Completion

The final phase involves the number of out-of-school pupils who successfully complete the primary school curriculum.

Identification and recruitment of out-of-school pupils in Gianyar Bali has been successful. Table 6 shows the total number of pupils enrolled and the number of drop-outs in 1979-1980 in the 27 provinces of Indonesia. In all 1,210,990(5.7%) pupils dropped out from the 26 provinces and the pupils drop-out rate ranged from 10.3% in Kalimantan Timur (East Kalimantan) and Nusa Tenggara Barat (West Nusa Tenggara) to 0.8% in DKI Jakarta Raya. In Bali itself the total number of drop-outs is 16,518 (4.2%). The number of drop-outs and their geographical distribution will affect the selection of Patjars.

The "Patjar" component of the SD PAMONG Project is one of the few programmes available to provide the drop-outs an opportunity to complete primary education. "Kewajiban Belajar" (Compulsory Education) is likely to be the major policy goal of the Ministry of Education and Culture in Repelita IV. Education will be compulsory for children between the ages 7-12. In this case the Patjars will potentially have a key role to play in the implementation of Kewajiban Belajar. The Patjar component of the SD PAMONG will be one of the few programmes designed to provide regular primary education opportunity to those pupils who have dropped out.

There are five major aspects involved in the future implementation of Kewajiban Belajar for pupils between ages 7-12 who have dropped out of the regular SD program.
These are :

1. Data gathering to gain accurate information on the potential clientele;
2. Planning of programs to reach the clientele;
3. Placement of students at appropriate grade level;

4. Motivation of students to enter and to complete the program; and
5. Monitoring and evaluation of the program activities.

Data Gathering: Table 6 on drop-outs for the year 1979-1980 show significant differences between provinces. Though no drop-out data is available, one could assume that there are also significant differences between Kabupatens in a province. The effective establishment of Patjar (Learning Post) will depend upon surveys conducted to gain accurate information of the potential clientele for the Patjars.

Motivation and Planning of Program: In Gianyar Bali, and in Solo, one finds that the number of active Patjars have declined. The primary reason given is that a large number of previous Patjar students have successfully obtained their STTB SD or Ujian Persamaan.

There is also the obvious question of motivation. Grade VI students can see better the end of the road and so are better motivated to study faster than pupils in Grades IV and V. Grade VI students can hope to get the certificate showing completion of primary education so that they can qualify for certain types of jobs, such as bus drivers, soldiers and so forth.

Table 6 : Number of pupils and drop-outs by province in 1979-1980

Province	Total pupils	Drop-outs total	Drop-outs %
1. DKI Jakarta Raya	885,802	7,055	0.8
2. West Java	3,925,170	273,867	7.0
3. Central Java	3,633,214	213,554	5.9
4. DI Yogyakarta	458,539	16,904	3.7
5. East Java	3,858,470	220,798	5.7
6. DI Aceh	351,750	6,479	1.8
7. North Sumatra	1,479,019	97,723	6.6
8. West Sumatra	567,712	34,924	6.2
9. Riau	299,640	22,263	7.4
10. Jambi	194,088	9,052	4.7
11. South Sumatra	658,828	24,000	3.6
26. Bengkulu	108,166	2,770	2.6
12. Lampung	642,868	38,686	6.0
13. West Kalimantan	318,005	9,870	3.1
14. Central Kalimantan	136,791	5,916	4.3
15. South Kalimantan	260,888	12,874	4.9
16. East Kalimantan	166,448	17,158	10.3
17. North Sulawesi	377,459	20,820	5.5
18. Central Sulawesi	213,358	11,090	5.2
19. South Sulawesi	909,143	36,809	4.0
20. South East Sulawesi	159,033	11,228	7.1
21. Maluku	216,743	12,523	5.8
22. Bali	393,478	16,518	4.2
23. West Nusa Tenggara	361,009	37,303	10.3
24. East Nusa Tenggara	442,290	37,198	8.4
25. Irian Jaya	147,813	13,608	9.2
27. East Timor	---	---	---
I N D O N E S I A	21,165,724	1,210,990	5.7

Many of the students who attend the Patjars are rather adults whose ages range from 15 to 20. In view of their ages, the question arises, whether modules written for children (age 7 - 12 years) are suitable for students who are above the age of 14 or 15 years, Loganathan (1981) posed the question: "Should not these Patjars be considered as centers for adult education rather than centers for extended elementary education?" The present modules can be effective for drop-outs between ages 7-12 (or may be 14).

In many cases, drop-outs are already in the work force. Many will suggest that relatively few drop-outs will be attracted by the prospect of obtaining a SD certificate only. A more attractive programme will be needed to include training which relates more directly to local work requirements and opportunities. Officials in Bali, for example, have stressed the need that Patjars should provide training in "functional skills". Over the years, the average age of the backlog of out-of-school pupils will steadily be more than 12 years. Perhaps an adult education approach will be more profitable and successful for the target age group of 13-14 years and over. The contents of the course can be selected so that there will be better attendance and reception. For example, in mathematics, focus of attention could be on the development of computational skills. There is evidence to show that pupils from Patjars do not do well in new mathematics. On the new mathematics curriculum in primary school in Indonesia, Beeby (1976) had this to say "Quite apart from the problems of teaching, I have reservations on the wisdom of in-

troducing new mathematics into a primary school system where so many pupils drop-out well before its advantages can appear, and where it may interfere with simple arithmetical skills required in daily life". There is a need for re-thinking on the concept of introducing new mathematics and breaking away from old arithmetic in the primary school and more so for a programme for the drop-outs.

There are a number of questions to be asked and answered about the Patjar component of the SD PAMONG System.

What will be the long term audience of the Patjars?

If the answer is that the Patjars are for 7-12 years old drop-outs, then the Patjars have an important role to play in implementing the Kewajiban Belajar. Data gathering procedures to gain accurate information of the drop-out will have to be refined. A number of specific process evaluation questions for the learning post component of PAMONG will have to be answered.

- Are the learning posts located for easy access by drop-outs?
- Are the classes scheduled at the right times during the day, week and season?
- Are the modular materials arriving at the appropriate times?
- Is equipment available and satisfactory?
- Is the Patjar teacher trained and thoroughly familiar with his/her role?
- Are placement tests available to identify pupils who are not functionally literate?

- What is the nature and extent of the academic progress of learning post participants?
- Is there information about the introduction or availability of other development oriented project which might be linked with Patjar's activities.

There will be need to standardize the means for implementing and evaluating what each Patjar does decide to try. An educational survey is taking place in Gianjar Bali which could provide a proto-type structure for Kewajiban Belajar planning, data collection and learner motivation.

The Patjars for the age group 7 - 12 years will begin with a large initial effort to deliver education to the drop-outs but will quickly exhaust most of its potential audience as the backlog of drop-outs are taken care of. With compulsory education, there will be only a trickle of continuing drop-outs.

The backlog of drop-outs over the age of 12 years will be substantial for some years to come. To meet the need of this group, there is a need to work out cooperative relations between PAMONG and PENMAS (Community Education) that would allow for a policy of no age restriction on Patjar's attendance. PENMAS could provide the basic literacy training necessary to enter the PAMONG system at the third of fourth grade.

Such a policy will foster the education of a huge mass of rural population-so useful to development efforts and will ensure a much longer use-

ful operating life-time for the Patjar system.

The role of multimedia in the education of drop-outs need a closer study. The Center for Educational and Cultural Communication (TKPK) which is also a part of BP3K is working on education through television for the age group 10-15 years, especially those who come from economically weak families. There is a need for developing a relationship with TKPK and PAMONG Project.

Briefly, the Patjars are flexible in terms of learning time, place of learning and provision for multiple entry and multiple exit and so reducing the probability of being dropped out. The Patjars have a vital role in extending primary education to the age group 7-12 years in terms of Kewajiban Belajar. But the role of Patjars will decline as the backlog of school drop-outs are eliminated and school drop-outs decline with the introduction of compulsory education. For pupils who are over 12 years, a cooperative relationship between PAMONG and PENMAS will foster education of a huge mass of people especially from the rural sreas - so useful to the development efforts.

B. Economic Feasibility of the PAMONG Project

A cost study is underway in Solo for PAMONG but has not progressed to the point where data can be reported. There are indicators that can be considered as reasonable reliable predictors of economic feasibility. Any system which can succeed in reducing personnel costs - salaries, or in increasing substantially the clientele served, will have a

definite impact on per pupil costs. In Indonesia about 75% of total educational costs are in terms of teacher salaries. Klees (1981) in a report entitled Considerations in the Economic Evaluation of the PAMONG Project has provided excellent contribution to the analysis of the cost and effectiveness of the PAMONG Project. Essentially what the decision maker wants is the cost of converting a part of a regular school system to a PAMONG system. Klees' approach of separating in-school from Patjar costs is also useful to the decision maker as it points out some of the possibilities for alternative versions of PAMONG that might be applicable for certain contexts and policy goals.

C. Some Methodological Lessons

1. Stage of experiment starting from a conception

The usual type is experiment starting from a hypothesis. An experiment is usually defined as a method to test the hypothesis. Among the first basic tasks to conduct this type of experiment is the question of effective and efficient procedures and techniques to have valid and reliable data on the effects of certain independent variables to certain dependent variables. This implies questions on how to control extraneous variables and how to apply the independent variables to be certain of their effects.

SD PAMONG experiment was not that type of experiment. It started from a conception of a system to deliver primary education using the following three concepts, (i) that learning is a life-long

process, (ii) that learning as far as possible, should be self-instructional, (iii) that learner interaction should be promoted as a learning device, and (iv) that primary education should be a joint responsibility among the parents, the community and the teachers.

Starting from a concept the next step could not be the question on what is the effective and efficient procedures and techniques to have valid and reliable data on the effects of the concepts concerned. Rather, first of all, one should find the operational instances of the concepts, including trials and errors. And some operational instances proved to be bad or not desirable. Operationalization of a concept could also serve as procedures to test the feasibility or the desirability of a concept. At the beginning, non payment or voluntary work was part of SD PAMONG's conception adopted from IMPACT. The conception expected that people will assist the learning-teaching activity free of charge. This voluntary concept proved to be not feasible to apply, and therefore it was dropped.

Stages of experimentation starting from a conception as it evolved from this SD PAMONG experiment has been described on Chapter III of this report.

2. Policy Research and the Role of Research Manager

In the first two years, i.e. 1973-1974, SD PAMONG experimentation was, in operational terms, completely dominated by foreign management. It was a joint effort by the Government of Indonesia and

INNOTECH SEAMEO Regional Center. But the facts were at the initial stages, everything was operated based on the decisions and the instructions of INNOTECH. If this type of management was continued it could be expected that chances are that the results would be irrelevant for Indonesia.

There are three objectives for policy research: (i) to search for and to identify new policy problems and to suggest alternate policy decisions to handle the problem, (ii) to study and to identify alternate ways and means for existing mechanism to improve the implementation of given policies, and (iii) to innovate and to identify new or additional mechanism including its ways and means to be considered as new or additional policies.

PAMONG research and development is part of a program to improve the provision of primary education. One of the important assumptions underlying the program is the believe that wholesome and optimal development of the human resources within the human beings constituting the citizen of a country is absolutely required if the development of the country concerned is to be successful optimally. And one important mission to be achieved by the implementation of the program, in cooperation with related programs, is developing Indonesian society to become a learning society. The future demands not only that learning should be more and more continuous, but more and

more self-instructional as it is possible, to get optimal benefits from the progress of science, technology and culture both for the individual and for the country. This constitutes a core motivation in the long range of the program.

SD PAMONG experiment is a policy research. The policy is the provision of primary education for all who need it. It was the understanding that not enough budget would be available to provide primary education using existing primary school system. But later the condition was changed. Budget was, and is, available to establish conventional primary school whenever it was needed. If the design of the experiment was not adjusted to the changing conditions the experiment would be alienated from the concrete setting and social support could not be expected.

It is the duty of the research manager, in a policy research, to see to it that research is really sub-ordinate to the policy. In other words, it should be adjusted whenever there is a need to adjust to the changing condition. In the case of SD PAMONG experiment the changing condition is reflected in the establishment of the so-called INPRES SD. And the adjustment made by the experiment was in relation to the clientele. To adjust to the changing condition the experiment includes the school drop-outs as its clientele and use this as the momentary identity of SD PAMONG. This is also momentary because it is expected that the three concepts mentioned would be the intrinsic identities of the SD PAMONG system.

In the case of SD PAMONG experiment the research manager's role is performed by the Center for Educational and Cultural Innovation, BP3K. The actual conduct of the experiment is not done by this Center. It is conducted by a special research group of the University Sebelas Maret in Solo. (UNS).

In this research and development the research manager played the following four roles: First, maintaining relevancy with policy ; Second, marketing of the results; Third, providing technical support; and Fourth, providing financial support.

3. Development from within approach

Whenever we went, in the conduct of this case study, wherever SD PAMONG delivery system or techniques are used, i.e. in Solo, East Java, Bali, Central Kalimantan and Southeast Sulawesi, we always found strong local roots of support. From the knowledge that people had and from the enthusiasm when they were telling about PAMONG or Small Schools, it was clear that the authorities in the respective regions were really concerned and proud of the use of the SD PAMONG and/or Small School delivery system. This were true both for the authorities concerned in the Regional Office of the Ministry of Education and in the Local Government. Manpower, material and financial support were also always found. A great portion of equipment, facilities and financial back-up were not coming from BP3K, but from other resources. Moreover, the Governors of East Java, Central Java and Southeast Sulawesi,

each issued their own letter of decisions on the use of SD PAMONG. This development from within is an approach consciously adopted in this research and development and it is suspected as one of the important reasons of its continuous growth.

4. Research Management as a Training Need

It was clear, from this case study, that the documentation of this experiment is very poor. There is no list of documents and there is no neat filing system. Even if it is certain that certain documents exist they are difficult to find. Moreover, many experiences and thoughts are still being kept in the heads of the researcher or the research manager. These, of course, are not conductive for cumulative growth of thinking and findings. Therefore research management is a training need.

CHAPTER V

SUMMARY AND RECOMMENDATIONS

First of all the monograph has attempted to provide background information about the development of primary education, and the educational polciy in Indonenesia. The structure and organization of the primary school system in Indonesia has developed and performed extremely well. In 1951, about 5 million pupils were enrolled in the primary school and in 1981-1982, the system provided primary education to about 23.8 million pupils.

The educational policy of the Ministry of Education and Culture has been guided by three main concepts. The concept of life-long education implying that education covers the entire life span of an individual and includes formal, non-formal and informal patterns of education. The second concept implies coordination of education with the home, the local community, the larger society and with the world of work. The third concept is that education is the vital means for national development. Guidelines of the State Policy (GBHN) considers the development of children as essential to the development of the nation and so high priority should be given to equity and justice and the goal of universalization of primary education, the Ministry of Education and Culture has faced two major questions: 1) How to deliver the primary school curriculum to all the school children including the disadvantaged children? and 2) How to improve the quality of primary education? Various efforts have been undertaken to get answers to the questions and one such is the SD PAMONG Project. There seems to be a rather clear case for the technical feasibility of the SD PAMONG Project. The SD PAMONG Project has

been implemented in a large scale for over two years and it has utilized the existing structures of administration. So the project can be judged to be administratively feasible and it imposes no additional requirements.

A. Summary

The major points developed in the monograph about the SD PAMONG Project may be summarized as follows:

1. PAMONG concept is based on low-cost learning strategies and tactics, designed to reduce per pupil cost, to improve the quality of learning, and to maximize utilization of relevant resources available to primary education.

2. The objective of the project is to provide learning opportunities to all school-age children, both those who are not able to go to school as well as those who are in school.

3. The four basic concepts in the PAMONG conceptions are; (i) that learning is a life-long process, (ii) that learning should be self-instructional as far as possible, (iii) that learners interactions should be systematically developed as part of the learning system, and (iv) that education should be the responsibility of the parents, community and the teachers.

4. Ten Characteristics of PAMONG system are:

   a. Clientele are all primary level children especially those who are deprived.

   b. Learning material based on the legal existing primary school curriculum.

   c. The nature of education is learning process.

d. The mode of learning, exist every where and any time

e. Education is the process of specialization

f. Educator is the teacher and others

g. Multiple entry and multiple exis

h. Promotion based on mastery learning and self based

i. Education is the responsibility of parents, community and government

j. Teachers are the managers of learning process

5. The twenty-one elements of PAMONG System are:

a. Clientele
b. The instructional supervisor
c. Registrar
d. Tutor/programme teacher
e. Community skilled people
f. Parents
g. Modules/syllabi
h. School Principal
i. Head of the Office of Education and Culture for Sub-district
j. Head of non-formal education
k. Primary school supervisor
l. Head of the sub-district
m. Head of the village and staff
n. School administration
o. Mechanism of reporting
p. Evaluation
q. Learning post
r. Mode of learning through modules
s. Combination of the ways to present learning materials
t. Schedule
u. Promotion/examination system

6. Every Patjar has a certified teacher and pupils use the same materials and modules and follow the same prescribed curriculum of regular primary school. Some Patjars are located at Pamong School and some are run by conventional schools (PPKB). A PPKB must bear all the normal costs of a conventional school and must also provide facilities for out-of-school pupils.

7. Findings, as fragmentary as they may be, appear to show that Patjars start out with enthusiastic subscription of enrolment. However, the strength of pupils desire and their perseverance to carry them through to completion are still uncertain factors. Motivation of out-of-school pupils seem to be fundamental to the success of Patjars.

8. Many of the pupils attending the Patjars are rather adults and so the question arises whether should not these patjars be considered as centers for <u>adult learning</u> rather than centers for extended primary education? There is a need to work out a cooperative relation between PAMONG and PENMAS (Community Education).

9. SD PAMONG Schools (PKBs) use the modular self-instructional materials as the primary source in the teaching-learning process. Other resources (Instructional Supervisor, Tutor Kakak, Tutor Sebaya) either perform roles programmed by the modules or serve as learning aids in helping progress through the sequence of modules.

10. A number of substantive problems have been observed with regard to the modules. The foremost problem

that need immediate attention is the lack of interest of students in the modules, the inability of the system to ensure mastery of the modules, and the completion of at least the core modules by all students. There are also issues related to the structure of the modules. The self-paced feature of modules generally creates more complex management of learners problems than it solves.

11. The concept of self-directed learning is employed by PAMONG, and in this mode of learning one may use collective learning, including guided learning and inter-learning. During the earlier stages of the project, learning became individualized and the system as a whole reduced the frequency of meaningful interaction between teachers and students. A number of studies are now being carried out and to improve the teaching-learning process.

12. Teachers' main role in PAMONG is to train tutors, to encourage children's self-learning and to perform remedial training. In general teacher's main role is to manage the learning materials and learning.

13. SD PAMONG completed the Exploratory Prototype Stage (1974 - 1976) by operationalizing the various theoretical elements. The feasibility of the Prototype (1976 - 1978) was carried out in two villages and the self-instructional modules were prepared. Refinement of the model started in 1980.

14. Cooperation between BP3K and UNS in Solo has played a major role in the development of the project. UNS received through BP3K funds from IDRC, USAID, UNDP/ UNESCO and UNICEF for various mutually supportive

purposes. The financial aid through the different agencies has helped the PAMONG Solo Unit to refine the concept of PAMONG, improve the modules, monitor the teaching-learning process and carry out a number of studies to improve the teaching-learning activities. If the present institutional building efforts are successful, the PAMONG Solo Unit at UNS will become a center to provide support to other educational developments.

Briefly one may conclude that SD PAMONG Project is now in a fairly-well advanced stage of development. There is no need to project the PAMONG Model as being "perfected" to the point that one can say that it is the Model to use. From the reports it is clear that neither BP3K nor the PAMONG Solo Unit of UNS ever anticipated that PAMONG Model will be taken from the rack and used immediately to fit the needs of all regions of Indonesia. Tailoring would always be necessary. PAMONG is a dynamic process and must take into account the human and situational factors.

B. Recommendations

1. As the amount of knowledge and technical know-how that children and adults should know and master are increasing tremendously at continuously faster rate, the capabilities and capacities of children and adults to learn should be continuously strengthened and enlarged. The traditional methods of teaching and learning cannot cope up with the problems arising from the growth of knowledge and technology. Therefore there is a need to develop the self-instructional learning system and for this purpose there is a need to provide further assistance to UNS Sebelas Maret to develop its potential and capacities to meet the needs of the country.

2. A lot of data are still not analyzed. It is assumed that many lessons and knowledge still need to be uncovered from the experiment. Shortage of expertise and skilled manpower are obvious causes of the problems. Therefore the need for expertise development and further training should be provided. Four researchers have so far obtained the Ph.D. degrees in the course of conducting this development research - one funded by UNESCO, and the other three funded by IDRC. Both this type of degree training and on-the-job training, i.e. training directly tied up with the conduct of research and development should be continued.

3. The fact that this development research is matching very well the Government policies and is flourishing beyond the experimental site based on the principle of growth from within, indicates that the research management is not bad. But there are many things that still

need to be improved, e.g. the monitoring system, the system of quality control, the reporting system, the filing system etc. Taking into account the geographical distribution of Indonesia and the role BP3K has to play in developing education, there is a need to improve and develop the research management.

4. There is a need to produce a detailed implementation strategy to be included in the KK Wajar Plan (Kelompok Kerja Perintisan Kewajiban Belajar or Pioneering Work Group Effort of Compulsory Education) for providing educational opportunities for out-of-school children between the ages 7 to 12 years. The strategy should include variation in the following areas:

    a. Needs Assessment
    b. Location
    c. Motivation
    d. Skill Training
    e. Integration with other Development Activities
    f. Community Involvement

    There is the need to <u>standardize the means</u> for implementing Kewajiban Belajar programs. The objective of this effort should be to prepare a model or framework in readiness for inclusion of compulsory primary education throughout Indonesia in the Repelita IV.

    An educational survey is taking place in Kabupaten Gianyar, and this could provide a prototype structure for Kewajiban Belajar planning, data-collection, learner-motivation, etc.

5. Placement tests should be developed to identify school drop-outs with serious learning disabilities i.e. those who would be incapable of progressing in the Patjar system.

6. Evidence as fragmentary as it may be, appears to support the observation that Patjars start out with enthusiastic subcription of enrolment but the strength of pupils desire and perseverance to carry them through to completion are still the uncertain factors. The key to encourage school drop-outs to join Patjar lies in the reoreintation of development efforts, especially to those which foster local, rural development activities in which education is both useful and rewarding.

There is a need to work out a cooperative relation with PENMAS that would create coordination between the two programs. The Repelita II identified out-of-school youths and young adults, aged 10-24 years, with little or no formal education as the prime target for PENMAS. Among others, this group comprises most of the 3-4 million out-of-school children aged 7-12 years. A disproportionally high number of the target population come from the rural lower socio-economic group. The most successful mechanism employed by PENMAS to deliver its educational program is the village-based learning group organized by field workers. Working in close cooperation with local government officials and village leaders, fieldworkers organize the learning groups. A second means by which PENMAS delivers its education program is through training provided by the District Training and Production Center called SKB. The training is designed to impart practical skills.

PENMAS provides basic literacy training (through Paket A), that is necessary to enter the PAMONG Patjar system in the fourth grade. A policy of close coordination between PENMAS and PAMONG will foster the education of the huge mass of rural population so useful to development efforts.

The Center for Educational and Cultural Communication (TKPK) which is a part of BP3K, is working on education through television for children between the ages 10 to 15, especially those of the economically weak families. A close coordination between TKPK television programme and SD PAMONG would be very beneficial.

7. PKB SD PAMONG School

The PKB SD PAMONG School is particularly appropriate for populated rural communities, whose schools have high drop-out rates, low attendance, and provide relatively ineffective instruction through conventional teaching-learning process. The decision makers have the following alternatives:

1. Convert SD regular schools to SD PAMONG schools and establish Patjars with the assistance of two or three teachers released by using the modular system, and
2. Convert SD regular schools to SD PAMONG schools without establishing Patjars.

From the evidence available so far SD PAMONG (PKB) seems to be a viable school on its own. PKB school could have profound implications for what happens in SD regular school, especially on the conventional teaching-learning process. It is clear that the delivery system at the upper grades of PKB school is inadequate in a number of ways already discussed. The delivery system is being restructed so that there is greater interaction among the teachers and pupils. Action research that is going on in the PKB schooling to improve the teaching-learning process is of basic importance. The evaluation focus at this stage should be on programme improvement rather than learning outcomes. Summative achievement questions prior to the improvement of the delivery system could hinder the efforts to improve the programme.

8. The use of textbooks in some school subjects in the PKB schools should be tried out. What is needed is the structuring of class teaching. The use of text-books and teacher's behaviour could be programmed so that the class-teaching is modified in the direction intended. Text-books could be accompanied by short modules which will provide step-by-step instructions for the learning of the textbooks.

9. There is need to improve conditions of the classroom in the PKB schools. PAMONG has not done anything to enrich the usual environment of the classroom. "There is art everywhere (Bali), even in the padi fields, except in the schools" (Loganatahan - 1981).

10. Although there is good community participation in the PAMONG Project, there is little PAMONG participation in the community. More explanation and information about the idea of SD PAMONG for all children should be provided. There is a need for SD PAMONG to carry out social and cultural activities to help the surrounding community e.g. service work to help clean the village.

11. There are a number of issues related to the improvement of the structure of the modules. Continuous research is needed to improve the quality of the modules, while module production and distribution must be taken into account seriously.

12. The current system seems to be designed by practice to be "teacher proof" and to place the teachers in the role of managers of materials rather than managers of learning. Teacher-mediated instruction should have an important place in the PAMONG system and for a number of paedagogic purposes, the children need to interact with a teacher. Teachers should be given the option of teaching the "essential" in a group-based/teacher-paced fashion since this approach is managerially simpler than an individually-based/student-paced strategy.

13. PAMONG, through its Sekolah Kecil program can provide systematic and effective primary education for both in-school and out-of-school children living in small, isolated, rural communities. PAMONG instructional system permit teachers to manage effectively several grades of in-school students.

14. PAMONG is now in its advanced stages of developments and it has been shown that PAMONG can provide for both in-school and out-of-school education. The design and management of PAMONG/PKB system permits the release of teachers form in-school students.

15. Decisions should be taken soon by PDM and BP3K with regard to the dissemination and implementation plan for PAMONG to achieve the goals of Wajib Belajar in Repelita IV throughout Indonesia. Commitment to the Project by PDM is essential for the dissemination and implementation of the Project. Sufficient understanding of the various components of the SD PAMONG by administrators is essential to insure that the system is correctly implemented and to help in adjusting the various components of the SD PAMONG to local conditions.

Through its infrastructure, PDM could (1) print and distribute instructional modules and juklaks, (2) survey communities and select sites for Patjars, (3) select SD-regular schools to convert them to PKB's (4) train officials at all levels in the conduct of PAMONG educational activities and (5) monitor and supervise PAMONG operations.

The Solo Unit of PAMONG at UNS under contract with PDM should continue to undertake special studies, provide technical support services and make necessary revisions in modules and the delivery system. There must be sufficient research capability to ensure that the system is carefully and effectively developed and evaluated.

BP3K by 1984, should provide along with the support of PDM, overall monitoring of the PAMONG implementation and continue its responsibilities for summative evaluation.

REFERENCES

1. Beeby, B.E. - Indonesian Education An Experiment in Asseşsment, BP3K, 1977

2. Bernard, Doran - Monthly Reports, Unpublished Bali, 1980-1981

3. BP3K Evaluation Team - Final Report on the Mid-Term Evaluation of the PENMAS Non-Formal Education Project, BP3K Jakarta December 1981

4. Danusastro, Soehardjo - Analisis Perbandingan Antara Pengaruh Keterarahan Belajar Terprogram dan Klasikal Terhadap Prestasi Belajar

5. Flores, P.V. - Educational Innovation in the Philippines: A Case Study of Project IMPACT, Ottawa IDRC, 1981

6. Indonesia - Self-Instructional Learning System USAID/Indonesia, July 1978

7. Joesoef, Daoed Dr. - Pengarahan Menteri Pendidikan dan Kebudayaan pada Rapat Kerja Para Gubernur dan Bupati/Walikotamadya Se-Indonesia Tanggal 11 Maret 1980 tentang KEWAJIBAN BELAJAR, Jakarta 1980

8. Klees, S.V. - Considerations in the Economic Evaluation of the PAMONG Project, Jakarta, BP3K 1981

9. Loganathan, K. - Consultancy for PROYEK PAMONG Unpublished, 1981

10. Mudjiman, Harris - The Application of Module and Tutor Mediated Mastery Learning in Modular Instruction School. A Case Study of the IMPACT Experiment Indonesia, 1981 (Ph.D. Dissertation)

11. Muntasir,Moch. Saleh - Pengajaran Terprogram Dalam Bahasa Indonesia dan Matematika: Suatu Analisa Perbandingan dengan Pengajaran Tradisional, Januari 1982 (Ph. D. Dissertation)

12. Nielsen, H.D. - Six Months Report October 1980 - March 1981 Unpublished Report, 25 May 1981

13. Nielsen, H.D. and Bernard, Doran - Six Months Report, April 1 - September 30, 1981 Unpublished Report, 30 November 1981

14. Pusat INOTEK - Report of Research at Development of SD PAMONG up to the Stage of Prototype Development BP3K, Jakarta 1979

15. Soenarwan - Pengaruh Pengajaran Modul dan Klasikal Terhadap Prestasi Belajar Ilmu Pengetahuan Sosial dan Matematika Ditinjau dari Intelligensi Siswa dan Need for Achievement Guru December 1982 (Ph.D. Dissertation)

16. UPT PAMONG - Actual Report: Research and Development of the PAMONG Primary School May, 1981

17. Widada, B.W. - The PAMONG System BP3K, Jakarta 1974